

REMARKS

In response to the Office Action mailed August 17, 2007, applicant respectfully requests reconsideration. In the Office Action, claims 1-24 were rejected. Claims 1-24 remain pending in the application.

Claim Rejection Under 35 U.S.C. §112

Claims 1-9 were rejected under 35 U.S.C. §112, second paragraph. By this amendment, applicant has amended claim 1 as suggested by the examiner. Accordingly, the rejection of claims 1-9 is moot and should be withdrawn.

Claim Rejections Under 35 U.S.C. §103

Claims 1, 2, 6-8, 10, 11, 13, 14, 18-20, 22 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jamal (US 5,572,712) in view of Wagner (US 6,169,418). The examiner admits that Jamal does not teach coupling the first logic section or the second logic section to the SUT based upon respective states of two control signals. The examiner further states that Wagner teaches a multiplexer which selects inputs based on the states of two control signals and that it would be obvious to replace Jamal's multiplexer with Wagner's multiplexer. This rejection is respectfully traversed, as there is no motivation in either reference for the combination suggested by the examiner because each reference teaches away from the combination, because the combination is based on improper hindsight reconstruction and because, even if there was the proper motivation, the combination does not teach the invention recited in the claims.

Independent claim 1 recites, among other features, that the third logic section selectively couples the first logic section or the second logic section to the SUT based upon respective states of two control signals, one of the two control signals being transmitted to the third logic section from a source that is external to the SUT, the first logic section, the second logic section, and the third logic section, the other of the two control signals being transmitted to the third logic section from the first logic section.

As set forth in applicant's previous response, Jamal's system has only *one control signal* for determining which of the "other components" and the BIST circuit 40 will be

coupled to the RAM 42. As set forth in Column 5, lines 15-20, in a “normal” or “functional” mode, the “other components” and the RAM 42 interact through the multiplexer 44, which detaches the BIST 40 from the RAM 42 during the normal mode. The test mode signal applied to the initialization logic 46 activates the BIST 40 (Col. 5, lines 21-22). Further, the initialization logic 46 commands the multiplexer 44 to decouple the RAM 42 from the other components of the integrated circuit die 32 and then couples the BIST 40 to the RAM (Col. 5, lines 23-25). The logic 46, based on the input of the test mode signal, *activates* the address generator 48, the MISR 50 and the clock and control signal generator 52 (Col. 5, lines 23-28). Therefore, without the input of the test mode signal to logic 46, the BIST 40 is *inactive*, and therefore does not output *any* signals to the multiplexer 44.

While the examiner states that Jamal discloses a control signal from clock and control signal generator 52 (which the examiner states corresponds to applicant’s claimed “first logic device”) to the multiplexer 44, this is simply not the case. As set forth in Column 5, lines 35-38, the generator 52 generates internal clock signals, address direction signals, read/write enable signals, MISR clock signals, test patterns, and an end-of-test signal for the RAM 42. Therefore, the generator 52 *does not generate or input a control signal to the multiplexer 44*. In fact, “the clock and control signal generator 52 generates the BIST test patterns and transfers them to the RAM 42 undergoing test through the multiplexer logic 44.” (Column 5, lines 39-41). These are the only inputs from the generator 52 to the multiplexer 44.

Based on the foregoing, it is clear that Jamal teaches a *single control signal*, the “test mode” signal input to the initial logic 46, which determines which of the “other components” and the BIST 40 are coupled to the RAM 42. When the test mode signal is “low”, the “other components” are coupled to the RAM 42 through multiplexer 44 and when the test mode signal is “high”, the BIST 40 is coupled to the RAM 42 through multiplexer 44.

In establishing a *prima facie* case of obviousness under 35 USC 103, it is incumbent upon the Examiner to provide a “clear and particular” showing of “actual evidence” of a suggestion, teaching, or motivation to combine references. In re Dembiczak, 50 USPQ 2d, 1614, 1617 (Fed. Cir. 1999). “Broad conclusory statements

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regarding the teachings of multiple references, standing alone, are not evidence.” *Id.*, citing McElmury v. Arkansas Power and Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) (internal quotations omitted).

In fact, in In re Dembiczak the Court of Appeals for the Federal Circuit recognized that “rigorous application” of the requirement for a showing of a teaching or motivation to combine references is the “best defense against the subtle but powerful attraction” of improper hindsight-based obvious analysis. *Id.*; See also, Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc., 73 F.3d 1085, 37 USPQ2d 1237 (Fed. Cir. 1995). (“obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor”). This is especially true in cases where the ease with which the invention may be understood “may prompt one to fall victim to the insidious effect of hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *Id.* citing W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983).

Since Jamal provides a specific description of the need for only *one* control signal, as described above, there is no suggestion of the desirability or motivation to modify Jamal to include a second control signal. In fact, based on Jamal’s specific description of the need for only one control signal, Jamal actually *teaches away* from anything other than a single control signal. Likewise, while Wagner discloses a conventional system 100 including a multiplexer having two control signals, he goes on to describe how this type of system is undesirable. See Col. 1, line 61 – Col. 2, line 11. Therefore, not only is there is no motivation in either reference to combine the references as suggested by the examiner, each reference specifically *teaches away* from the combination.

Applicant asserts that the only motivation for the combination suggested by the examiner is based on hindsight reasoning, which is improper under 35 U.S.C. §103. The examiner has taken applicant’s claim and attempted to find a way to modify one reference with another solely based on what is recited in the claim. For example, the examiner’s combination requires replacing Jamal’s multiplexer 44 with Wagner’s multiplexer 40 and including Wagner’s logic block 20 within Jamal’s BIST circuit so that the (newly replaced) multiplexer would be controlled by the test mode enable signal

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(which already controls the multiplexer in Jamal's system) and by Wagner's logic block 20.

The examiner has clearly taken components disclosed in Wagner and "forced" them into Jamal in an attempt to end up with a system such as that recited in applicant's independent claim 1. Since there is no motivation in either reference for such a combination, the motivation could only have come from applicant's claim, which is improper.

Even if the references were combined as suggested by the examiner, the combination does not teach the invention recited in independent claim 1. As set forth above, Jamal teaches a single control signal. There is no other control signal input to the multiplexer 44 by any component of Jamal, including the address generator 48 and clock and control signal generator 52. The examiner's combination requires replacing Jamal's multiplexer 44 with Wagner's multiplexer 40 and including Wagner's logic block 20 within Jamal's BIST circuit so that the (newly replaced) multiplexer would be controlled by the test mode enable signal (which already controls the multiplexer in Jamal's system) and by Wagner's logic block 20. However, the examiner has not indicated what the source of the second control signal would be in the combination, and applicant asserts that it would (and could) not be the first logic section, as recited in independent claim 1. Accordingly, since the combination suggested by the examiner does not result in the invention recited in independent claim 1, the combination is improper.

Accordingly, since there is no motivation for the combination suggested by the examiner and, even if there was, the combination would not teach the invention recited in independent claim 1, independent claim 1 is allowable over the combination and the rejection of independent claim 1 under 35 U.S.C. §103(a) should be withdrawn.

Claims 2 and 6-8 depend on independent claim 1 and are allowable for at least the same reasons as independent claim 1.

Independent claim 10 recites, among other features, selectively coupling the first logic section or the second logic section to the SUT based upon respective states of *two control signals*, one of the two control signals being transmitted to the third logic section from a source that is external to the SUT, the first logic section, the second logic section,

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and the third logic section, the *other* of the two control signals being transmitted to the third logic section *from the first logic section*.

Based on the argument set forth above, the combination suggested by the examiner is improper for lack of motivation and, even if proper, does not teach the invention recited in independent claim 10. Accordingly, independent claim 10 is allowable over the combination and the rejection of independent claim 10 under 35 U.S.C. §103(a) should be withdrawn.

Claims 11 and 12 depend on independent claim 10 and are allowable for at least the same reasons as independent claim 10.

Independent claim 13 recites, among other features, selectively coupling the first logic section or the second logic section to the SUT based upon respective states of *two control signals*, one of the two control signals being transmitted to the third logic section from a source that is external to the SUT, the first logic section, the second logic section, and the third logic section, the *other* of the two control signals being transmitted to the third logic section *from the first logic section*.

Based on the argument set forth above, the combination suggested by the examiner is improper for lack of motivation and, even if proper, does not teach the invention recited in independent claim 13. Accordingly, independent claim 13 is allowable over the combination and the rejection of independent claim 13 under 35 U.S.C. §103(a) should be withdrawn.

Claims 14 and 18-20 depend on independent claim 13 and are allowable for at least the same reasons as independent claim 13.

Independent claim 22 recites, among other features, selectively coupl[ing] the first logic section or the respective second logic section to a respective system-under-test based upon a respective control signal from the first logic section and also based upon another control signal, the another control signal being transmitted to each third logic section from a source that is external to the plurality of systems-under-test, the first logic section, the plurality of second logic sections, and the plurality of third logic sections.

Based on the argument set forth above, the combination suggested by the

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examiner is improper for lack of motivation and, even if proper, does not teach the invention recited in independent claim 22. Accordingly, independent claim 22 is allowable over the combination and the rejection of independent claim 22 under 35 U.S.C. §103(a) should be withdrawn.

Claim 23 depends on independent claim 22 and is allowable for at least the same reasons as independent claim 22.

Claims 3-5, 12, 15-17, 21-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jamal in combination with Miner and Walker. This rejection is respectfully traversed.

Claims 3-5 depend from independent claim 1, which, as set forth above is allowable over the combination suggested by the examiner. Accordingly, claims 3-5 are also allowable for at least the same reasons as independent claim 1.

Claims 12 depends from independent claim 10, which, as set forth above is allowable over the combination suggested by the examiner. Accordingly, claim 12 is also allowable for at least the same reasons as independent claim 10.

Claims 15-17 and 21 depend from independent claim 13, which, as set forth above is allowable over the combination suggested by the examiner. Accordingly, claims 15-17 and 21 are also allowable for at least the same reasons as independent claim 13.

Claim 24 depends from independent claim 22, which, as set forth above is allowable over the combination suggested by the examiner. Accordingly, claim 24 and is also allowable for at least the same reasons as independent claim 22.

Based on the foregoing, applicants respectfully assert that claims 1-24 are allowable over the art of record and respectfully request that a timely Notice of Allowance be issued in this application.

In the event the Patent Office deems personal contact desirable in disposition of this matter, the Office is invited to contact the undersigned attorney at (508) 293-7835.

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Please charge any fees occasioned by this submission to Deposit Account
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Respectfully submitted,

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